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VIII. *A Fourth Catalogue of the comparative Brightness of the Stars.* By William Herschel, LL. D. F. R. S.

Read February 21, 1799.

Lustre of the stars in Auriga.			
1	<i>f</i>	5	2, 1    4, 1
2	<i>g</i>	5.6	4, 2, 1    2.4
3	<i>i</i>	4	3-37    5 Arietis - 3-44 Persei    3.44 Persei
4	<i>ω</i>	5	4, 2    2.4, 1
5		6	5-6
6		6	5-6    6-12
7	<i>ε</i>	4	7-10    7-, 10
8	<i>ζ</i>	4	10, 8    33, 8    10=, 8-, 30
9		6.5	7 Camelop 7, 9    11 Camelop, 9-, 12 Camelop
10	<i>η</i>	4	7-10, 8    10 7, 33    7-, 10=, 8
11	<i>μ</i>	5	15; 11-20    15 7, 11 7, 21
12		6	6-12
13	<i>α</i>	1	13--3 Lyræ
14		5	16, 14.19
15	<i>λ</i>	5	15; 11    15 7, 11
16		6	16, 14
17		7.6	19.17, 18
18		8	17, 18
19		6	14.19.17
20	<i>ξ</i>	6	11-20    21, 20
21	<i>σ</i>	5.6	11 7, 21.20
22		6	26, 22

Lustre of the stars in Auriga.			
23	$\gamma$	2	13 Arietis, 23.34 34; 23 23, 34
24	$\phi$	5.6	25, 24
25	$\chi$	5.6	25, 26 25, 24
26		6	25, 26, 22 27, 26
27	$\circ$	6	27, 26
28		7	40 - 28
29	$\tau$	5	32, 29, 31 35. 29 -, 36
30	$\xi$	6	8 -, 30 42 Camel. 30 - 31 Camel
31	$\upsilon$	6	29, 31. 40
32	$\nu$	5	32, 29
33	$\delta$	4	10, 33, 8 33; 10 Camel
34	$\beta$	2	23.34 66 Gemin. 34 34; 23 23, 34
35	$\pi$	6	35. 29 35, 46
36		6	29 -, 36
37	$\theta$	4	3 - 37 24 Gemin, 37
38		6.7	39. 38, 42
39		6.7	39. 38
40		6	31. 40 - 28
41		6	46 - 41
42		6	38, 42. 43 47, 42. 43
43		6	42. 43
44	$\kappa$	4.5	44, 136 Tauri 44 - - 49
45		6	45. 46
46		5	35, 46 - 41 45. 46
47		6	47, 42
48		6	49 -, 48 - 53
49		5.6	44 - - 49 -, 48
50		5.6	50 - 52 50. 16 Lyncis
51		5.6	52 - 51
52		5	50 - 52 - 51
53		6	53. 28 Gemin 48 - 53, 54
54		6	28 Gemin, 54 - 25 Gemin 53, 54

Lustre of the stars in Auriga.			
55		5	55 - 58
56		6	58, 56 . 57    16 Lyncis, 56
57		6	56 . 57
58		4.5	55 - 58, 56
59		6	62 . 59 . 60
60		6	59 . 60
61		6	61 . 62
62		6.7	61 . 62 . 59
63		4.5	63 . 65
64		5	66 ; 64
65		5	63 . 65, 66
66		5	65, 66 ; 64
Lustre of the stars in Draco.			
1	$\lambda$	3.4	1 . 5
2		6	5 -- 2    3 ; 2
3		6	3 ; 2
4		6	6 ; 4
5	$\alpha$	3	1 . 5 -- 2    11 - 5, 13
6		6	6 ; 4
7		6	9, 7
8		6	10 - 8, 9
9		6	8, 9, 7
10	$i$	5	10 - 8
11	$\alpha$	2	11 - 5
12	$\epsilon$	3	40 Hercules - 12    22 -, 12    27 Herc - 12, 67 Herculis
13	$\theta$	3	5, 13
14	$\eta$	3	1 Ursæ min - 14    14 -- 22    14 - 23    14 -, 57
15	A	4	15 . 18
16		5	17 - 16

Lustre of the stars in Draco.			
17		5	17 - 16
18	<i>g</i>	5	19, 18 -, 20    15 . 18    21 . 18
19		5	19, 18
20	<i>h</i>	6	18 -, 20
21	$\mu$	5.4	21 . 18    30, 21
22	$\zeta$	2	14 - - 22 -, 12    57 ; 22
23	$\beta$	2.3	23, 40 Hercules    14 - 23    23 - 27 Hercules
24	$\nu^1$	4	24 . 25
25	$\nu^2$	4	24 . 25 - 26
26		6	25 - 26
27	<i>f</i>	5	28 - 27, 34    27 . 42
28	$\omega$	4	31 - 28 - 27
29		6	34 - -, 29
30		6	30, 21
31	$\psi^1$	7	31 - 28
32	$\xi$	3	44 -, 32 - 43
33	$\gamma$	2	7 Ursæ min - 33    5 Coronæ ; 33    55 Ophiu - 33
34	$\psi^2$	4.5	27, 34    35 . 34 - -, 29    34 - 37
35		6	35 . 34    35 - 40 + 41
36		6	42 . 36
37		6	34 - 37, 38
38		6	37, 38
39	<i>b</i>	5	45, 39 . 46
40		5	41 - 40
41		5	41 - 40
42		6	27 . 42 . 36
43	$\phi$	5	32 - 43
44	$\chi$	4	44 -, 32
45	<i>d</i>	5	45, 39
46	<i>c</i>	5	39 . 46 ; 47

## Lustre of the stars in Draco.

47	$\circ$	4	46; 47 -- 51    47 - 54
48		6	49 . 48
49		6	51 . 49 . 48
50		4.5	52 . 50 $\bar{5}$ 59    73, 50    55, 50    52 - 50
51		5.6	47 -- 51 . 49
52	$\upsilon$	4.5	60 - 52    52 . 50    52 - 50
53		5	54, 53
54		5	47 - 54, 53
55		6	61 -, 55    55, 50
56		6	Does not exist.
57	$\delta$	3.4	14 -, 57 $\bar{5}$ 22
58	$\pi$	4	63 -, 58 - 61    58; 67
59		6	50 $\bar{5}$ 59
60	$\tau$	4.5	60 - 52
61	$\sigma$	4.5	58 - 61 -, 55    67, 61
62		6	Does not exist.
63	$\varepsilon$	5.6	63 -, 58
64	$e^1$	5.6	64 -, 65
65	$e^2$	6.5	64 -, 65 -, 70    65, 69
66		6	68 . 66 . 71
67	$\varrho$	5	58; 67, 61
68		6	68 . 66
69		6	65, 69
70		6	65 -, 70
71		6	66 . 71
72		6	Does not exist.
73		5.6	73, 50    73 - 77    73, 78
74		6	75 - 74 . 76
75		6	75 - 74
76		5	74 . 76
77		5	73 - 77    78, 77

## Lustre of the stars in Draco.

78		5	73, 78, 77	16 Cephei, 78
79		7	80 - 79	
80		6	80 - 79	

## Lustre of the stars in Lynx.

1		5.6	1, 5	
2		4	2 - - 5	
3		6	8 - 3, 10	
4		6	4. 6	
5		6	2 - - 5 - 6	1, 5
6		6.7	5 - 6	4. 6
7		6.7	Does not exist.	
8		6.7	8, 41 Camelop	8 - 3
9		7	11 - 9	
10		6.7	41 Camelop - 10	3, 10
11		6	14, 11 - 9	
12		7	15; 12 -, 14	
13		6	13, 14	
14		5	12 -, 14	13, 14, 11 19, 14 - 23
15		5	15; 12	
16		6	50 Aurigæ . 16, 56 Aurigæ	
17		7	18 -, 17	
18		6	18 -, 47 Camelop	18 -, 17
19		5	24 - 19, 14	
20		6	21 - - 20	
21		5	22 - 21 - - 20	
22		6	22 - 21	
23		7	14 - 23	
24		5	24 - 19	
25		6	26 -, 25	
26		5	26 -, 25	26, 34

Lustre of the stars in Lynx.			
27		5	27 - 50 Camelop 31 -, 27
28		7	36 - 28
29		5	29 - 56 Camelop 29, 58 Camelop 29, 30
30		6	29, 30
31		5	31 -, 27
32		7	33; 32
33		6	33; 32
34		6	26, 34 36, 34
35		7	Does not exist
36		6	36, 34 37. 36 - 28
37		5.6	37. 36 37, 42
38		6	38 - 40
39		4	12 Ursæ, 39 39 -, 10 Leonis min 39, 10 Ursæ
40		6	38 - 40
41		4	25 Ursæ. 41 - 12 Ursæ
42		6	37, 42. 45 15 Leonis min. 42 -- 14 Leo- nis min
43		6	43 - 44
44		7.6	43 - 44
45		5.6	29 Ursæ -- 45 42. 45
Lustre of the stars in Lyra.			
1	$\kappa$	5	1 -, 2 6 - 1
2	$\mu$	6	1 -, 2
3	$\alpha$	1	16 Bootis -- 3
4	$\varepsilon$	5	6; 4. 5
5		6	4. 5
6	$\zeta$	5	6 -- 7 6 - 1 6; 4
7		5	6 -- 7
8	$\nu^1$	6	9, 8
9	$\nu^2$	6	11. 9, 8 15, 9, 8



## Lustre of the stars in Lyra.

10	$\beta$	3	10 . 14	14 $\bar{5}$ 10	14 -, 10	14 - - - 10
			6 + 7 $\bar{5}$ 10			
11	$\delta^1$	4.5	12 -, 11	18, 11 . 9	16, 11	
12	$\delta^2$	4	12 -, 11	12 . 13	12 - 18	12 - 16
13	$\pi$	6	12 . 13	20, 13		
14	$\gamma$	3	6 Cygni -, 14, 85	Herculis		
15	$\lambda$	6	15, 9	15 . 17	15 $\bar{5}$ 19	
16	$\rho$	6	12 - 16, 11			
17		6	15 . 17			
18	$\iota$	5	12 - 18, 11			
19		6	15 $\bar{5}$ 19			
20	$\eta$	6	21 . 20, 13	20, 21		
21	$\theta$	6	21 . 20	20, 21		

## Lustre of the stars in Monoceros.

1		6	3 -, 1 -, 2			
2		6	1 -, 2, 4			
3		6	3 -, 1			
4		6	2, 4 . 6			
5		4.5	11 - 5 -, 10	5, 8		
6		6.7	4 . 6			
7		6	10 - 7			
8		4	5, 8 - 13	8 $\bar{5}$ 15	8, 18	
9		5	10 -, 9			
10		6	5 -, 10 -, 9	10 - 7		
11		5	22 Orionis - 11 - 5	30; 11 $\bar{5}$ 26		
12		5	13 -, 12, 14			
13		4	8 - 13 = $\bar{5}$ 14	13 -, 12		
14		5.6	13 = $\bar{5}$ 14	12, 14		
15		4	8 $\bar{5}$ 15, 17			
16		6	17 - 16			

## Lustre of the stars in Monoceros.

17		5	15, 17-16
18		4	8, 18
19		5	22-19, 20
20		6	19, 20, 25
21		5	22-, 21, 24
22		4.5	22-, 21 22-19
23		6.7	24, 23
24		6	21, 24, 23
25		6	20, 25
26		4.5	11, 26, 29
27		5	29-27 28, 27
28		5	29, 28, 27
29		6	29-27 26, 29, 28 29, 31
30		6	30; 11
31		4	29, 31

## Lustre of the stars in Perseus.

1		6	4, 1-3 4-1
2	<i>g</i>	6	3, 2
3		6.7	1-3, 2
4		6	4, 1 4-1 4-9
5		6	9-5.7 7.5
6	<i>b</i>	6	65 Androm, 6, 63 Androm
7	$\chi$	7.6	5.7.8 8; 7.5
8		7	7.8 9-, 8; 7
9	<i>i</i>	6	4-9-, 8 9-5
10		7	Does not exist
11		7	27; 11-13
12	<i>q</i>	6	28. 12. 14
13	$\theta$	4	11-13, 18 18, 13
14		6	12. 14 24, 14

Lustre of the stars in Perseus.			
15		6	Lost
16	$p^1$	4	16, 22 16--20
17	$r$	5.6	17, 28
18	$\tau$	5	13, 18 18-13
19		6	Does not exist
20	$p^2$	6	16--20 28-20 43, 20
21		4.5	28.21
22	$\pi$	4	16, 22, 28
23	$\gamma$	3	23, 25 23-, 4 Trianguli
24	$s$	6	28.24, 14
25	$\varrho$	4	23, 25-41 39-25
26	$\beta$	2.3	26, 25 26; 25 26---25 6 Arietis, 26-23
27	$\kappa$	5.4	27; 11
28	$\omega$	5	22, 28.12 17, 28.24 28.21 28-20
29		6	34-29.31
30		6	32-30 36-30
31		5.6	29.31
32	$l$	6	32-30 32-36
33	$\alpha$	2.3	33--26 21 Androm, 33.43 Andromedæ
34		6	35-34 34-29
35	$\sigma$	5	37, 35-34
36		6.7	32-36-30
37	$\psi$	5	37, 35
38	$\phi^1$	6	46, 38, 59 41-38-46
39	$\delta$	3	45--39-25
40	$\phi^2$	6	52, 40.42 40, 42
41	$\nu$	4	25-41, 46 41-38
42	$n$	6	40.42 40, 42 54; 42-55
43	A	5	43, 20
44	$\zeta$	3	3 Aurigæ-44 3 Aurigæ.44 44, 45
45	$\varepsilon$	3	44, 45--39

Lustre of the stars in Perseus.			
46	$\xi$	5	41, 46, 38    38 - 46    46 - 58
47	$\lambda$	4	51, 47, 53
48	$c$	5	48, 51
49		6.7	50, 49
50		6.7	52, 50, 49
51	$\mu$	4	48, 51, 47
52	$f$	5	52, 50    53, 52, 40    58 - 52
53	$d$	6	47, 53, 52
54		6	54, 42
55		6	42 - 55, 56
56		7	55, 56
57	$m$	6	59, 57
58	$e$	5	46 - 58 - 52
59		6	38, 59, 57

Lustre of the stars in Sextans.			
1		5	1 - 2
2		5	1 - 2
3		6	8 -, 3, 5    6, 3
4		6	7, 4    4 - 12
5		6	3, 5
6		6	8 - 6, 3
7		6	7, 4
8		6	8 -, 3    8 - 6
9		6	12, 9, 13
10		6	29 Leonis = $\gamma$ , 10 - 11
11		5.6	10 - 11
12		6	4 - 12, 9
13		6	9, 13
14		6	14, 19
15		4	35 Hydræ, 15 - 32 Hydræ

## Lustre of the stars in Sextans.

16		6	19, 16
17		6	22, 17. 18
18		6	17. 18 - 20
19		6	14. 19, 16
20		6	18 - 20, 21
21		6	20, 21
22		6	22, 17
23		5	23, 26
24		6	28. 24 -, 26 33, 24
25		6	25. 26
26		6	24 -, 26 25. 26 23, 26 - 31
27		6	27, 28
28		5	29 - 28. 24 27, 28 - 32
29		5	30 - 29 - 28
30		5	32 Hydræ - 30 - 29
31		6	26 - 31
32		6	28 - 32
33		6	33, 24
34		6	35 - 34, 37
35		6	35 - 34
36		6	37. 36
37		6	55 Leonis -, 37, 38 34, 37. 36
38		6	37, 38
39		7	41 -, 39 40, 39
40		6	41 - 40, 39
41		6	41 -, 39 41 - 40

## Lustre of the stars in Taurus.

1	0	4	1 - 2
2	ξ	4	1 - 2, 35
3		6	Does not exist

Lustre of the stars in Taurus.			
4	<i>s</i>	6	5-, 4, 6 30-4
5	<i>f</i>	5	38-5-, 4 5-30
6	<i>t</i>	6	4, 6, 12
7		6	7.66 Arietis
8		6	Does not exist
9		6	Lost
10		4.5	38, 10, 49
11		6	21.11, 22
12		6	6, 12
13		6	13, 14 13-14
14		6	13, 14 13-14
15	<i>n</i>	6	Does not exist
16	<i>g</i>	7	18.16.21
17	<i>b</i>	5	27.17.20
18	<i>m</i>	7	28, 18.16
19	<i>e</i>	5	20, 19.23
20	<i>c</i>	6	17.20, 19
21	<i>k</i>	6.7	16.21.11
22	<i>l</i>	7	11, 22, 26
23	<i>d</i>	5	19.23-, 28
24	<i>p</i>	7	26, 24
25	<i>η</i>	3	27-, 27
26	<i>s</i>	7.8	22, 26, 24
27	<i>f</i>	6	25-, 27.17
28	<i>b</i>	7.8	23-, 28, 18
29	<i>u</i> <sup>1</sup>	6	29, 40
30	<i>e</i>	5	5-30-4 66, 30, 46
31	<i>u</i> <sup>2</sup>	6	40, 31
32		6	53, 32.33
33		7	32.33
34		7	39-34
35	<i>λ</i>	4	2, 35.38 123, 35

Lustre of the stars in Taurus.			
36		7	43 ; 36
37	A	5	65, 37 -- 39    37 -- 43
38	$\nu$	4	35 . 38 - 5    38 , 10
39		6	37 -- 39    51 - 39    43 - 39 - 34
40		7	29, 40, 31    46 ; 40, 45
41		6	42 ; 41 ; 44
42	$\psi$	5	52 . 42 ; 41
43	$\omega^1$	6	37 -- 43 - 39    43 ; 36
44	$p$	6	41 ; 44, 59
45		7	40, 45
46		7	47, 46 ; 40    30, 46 . 93
47		7	49 -, 47, 46    47 . 60
48		7	58 . 48
49	$\mu$	4	10, 49    49 -, 47    88, 49
50	$\omega^2$	6	65 - 50 - 56    50, 67
51		7	53, 51 - 39
52	$\phi$	5	52 . 42
53		7	56, 53, 51    53, 32
54	$\gamma$	3	77, 54 -- 58    54, 61    74 ; 54
55		7	63, 55
56		7	50 - 56, 53
57		6.7	58, 57 . 60
58	$b$	7	54 -- 58 . 48    58, 57    73 - 58 -, 76    58, 83
59	$\alpha$	5	44, 59
60		7	57 . 60    47 . 60
61	$\delta^1$	4	54, 61, 68
62		7	72 - 62    65 ; 62
63		6	64 -, 63, 55
64	$\delta^2$	4	68 - 64 -, 63
65	$\kappa$	5	65 - 69    65 ; 62    65 - 50    65, 37
66	$r$	5	66, 30
67	$\kappa^2$	5	69 - 67 . 72    50, 67 ; 72

Lustre of the stars in Taurus.			
68	$\delta^3$	6	61, 68 - 64
69	$\nu^1$	5	65 - 69 - 67    94 . 69
70		7	80 - 70
71		7	71 ; 75
72	$\nu^2$	6	72 - 62    67 . 72    67 ; 72    72 -, 95
73	$\pi$	5	73 - 58    86 , 73
74	$\varepsilon$	3 . 4	78 , 74 ; 54
75		7	71 ; 75 , 81
76		7	58 -, 76    83 - 76
77	$\theta^1$	5	77 - 54
78	$\theta^2$	5	78 , 74
79	$b$	5	90 -- 79 , 83
80		7	81 , 80 - 70    80 - 84    80 . 85
81		7	75 , 81 , 80
82		7	Does not exist.
83		7	79 , 83    58 , 83 - 76
84		7	80 - 84
85		7	80 . 85
86	$\rho$	5	86 , 73
87	$\alpha$	1	58 Orionis -- 87    19 Orionis = , 87 87 -- 78 Gemin
88	$d$	5	90 , 88 , 49
89		7	91 ; 89
90	$c^1$	5	90 , 88    90 -- 79    90 -- 93
91	$\sigma^1$	6	92 , 91 ; 89
92	$\sigma^2$	6	92 , 91
93	$c^2$	6	46 . 93    90 -- 93
94	$\tau$	5	94 . 69
95		6 . 7	72 -, 95
96		6	4 Orionis -- 96    97 -, 96
97	$i$	6	4 Orionis , 97 -, 96
98	$k$	6	106 - 98 - 99    103 . 98



Lustre of the stars in Taurus.			
99		6	98-99, 107
100		6	Lost
101		6	107, 101
102	'	4	102 = 106 102, 104
103		6	103.98
104	m	6	102, 104-, 106
105		6	106, 105-107
106	l'	6	102 = 106, 105 106.109 104-, 106--107 106-98
107	l'	6	105-107 108.107 106--107 99, 107, 101
108		7	109-, 108 109, 108.107
109	n	6	114-109-, 108 106.109, 108
110		7	116-110.113 115-110.117 120.110
111		6.7	111, 116 111, 115 119-111
112	$\beta$	2	112-, 24 Orionis
113		6	110.113
114	o	5	114-109
115		7.8	111, 115-110 122.115
116		6.7	111, 116-110
117		7	110.117
118		6	121-118
119		7	119-111
120		7	120.110
121		6	121-118
122		7	126-122-, 129 122, 130 122.115
123	$\zeta$	3	123, 35 13 Gemin-, 123, 7 Gemin
124		6.7	Does not exist
125		3	132, 125
126		6	126-122
127		6	130--127
128		6	129, 128
129		6	122-, 129, 128

## Lustre of the stars in Taurus.

130		6	122, 130 -- 127
131		6	133, 131. 132    135, 131, 137
132		4	139, 132, 125    131. 132. 135
133		6	134, 133, 131    134 - 133, 131
134		6	134, 133    134 - 133
135		6	132. 135 - 138    135, 131
136		5	136; 139    44 Aurigæ, 136
137		5	135 - 137    131, 137
138		6	Does not exist
139		6	1 Gemin - 139, 132    136; 139, 132
140		6	141. 140
141		6	141. 140

## Lustre of the stars in Triangulum.

1	<i>d</i>	6	3. 1
2	$\alpha$	4	4 -, 2 -, 9    31 Androm -, 2    2 - 99 Piscium
3	$\varepsilon$	6	7 - 3. 1
4	$\beta$	4	6 Arietis - 4    23 Persei -, 4 -, 2    4 =, 31 Andromedæ
5		7	7 - 5
6	$\iota$	6	6, 7    6, 10
7	$\eta$	6	8 - 7 - 3    6, 7 - 5    7; 14
8	$\delta$	5	9 -, 8 - 7
9	$\gamma$	4	2 -, 9 -, 8
10	<i>a</i>	6	6, 10; 12
11	<i>d</i>	7	12, 11, 13
12	<i>c</i>	6	10; 12; 13    12, 11
13		7	12; 13    11, 13
14		6	7; 14; 15
15		7	14; 15
16		7	16, 30 Arietis    33 Arietis -, 16

*Notes to Auriga.*

23 Is 112 Tauri.

30 Is 32 Camelopardali.

45 " Oct. 5, 1798. The time of this star, in the observation of FLAMSTEED, Vol. II. page 189, is marked :: but it cannot be much out, as the star seems to be in the place assigned to it by the British catalogue."

61. The RA in the *Atlas Cælestis* requires a correction of  $-42'$ .

*Notes to Draco.*

10 Is 87 Ursæ.

12 and 13 Were never observed by FLAMSTEED, but are in LA CAILLE's Catalogue of northern stars.

14 M. DE LA LANDE says the star is not to be found. See Mr. BODE's *Ast. Jahrbuch* for 1795, page 198.

I observed this star in a sweep of the heavens, June 2d, 1788. Its brightness was estimated Sept. 11, 1795; Sept. 24, 1796; Sept. 30, 1796; and Dec. 28, 1798; so that, if M. DE LA LANDE is sure no cloud intervened when he looked for it, we may suspect it to be a changeable star.

15 The British catalogue requires  $+30'$  in RA.

35 The expression " $35 - \overline{40} + \overline{41}$ " in my estimation of brightness, means that, with the naked eye, 35 is a very little brighter than 40 and 41 together, taken as one star. For they are so near each other, that the eye alone cannot distinguish them from a single star. The British catalogue gives them  $3'$  farther asunder than they ought to be according to FLAMSTEED's observation, page 463. See also Mr. BODE's *Ast. Jahrbuch* for 1785, page 173.

40 The estimation “ 40 — 41 ” was made with a 7-foot reflector, power 460.

56 Does not exist. FLAMSTEED has no observation of it. My double star II, 31, called 56 Draconis, is a star situated between 59 and 50, about  $1\frac{1}{2}$  degree from 59 towards 50.\*

62 Does not exist. FLAMSTEED has no observation of it; but, if an error of two hours be supposed in the calculation of one of the observations of 31 Draconis, it will account for the insertion of this star.

72 Does not exist. There is an observation, page 173, which produced it; but, if we admit an error of 3' in time in that observation, it will then belong to 71.

### *Notes to Lynx.*

7 Does not exist in the place pointed out by the British catalogue; but, in FLAMSTEED's observations, page 286, its time is marked :: and there is probably some considerable error.

20, 21, 22 The place of these stars in the heavens does not seem to agree with their situation in the Atlas.

\* When I say  $1\frac{1}{2}$  degree from 59 towards 50, it is to be understood that I express myself in degrees of a great circle. I have always used the same method of description in my catalogues of double stars; and, as these objects were pointed out for being viewed with telescopes of great magnifying power, which are generally not fixed, and therefore can give no right ascension, I am rather surprised to find that, in a catalogue published not many years ago, the author has taken my degrees of a great circle for degrees of right ascension. For instance, the double star IV, 82, where, in pointing out its place, I say, “ above  $\frac{3}{4}$  degree following the 16 Cephei, in a line parallel to  $\beta$  “ and  $\alpha$  Cassiopeæ,” is placed in the zone from 15 to 19° of that author's catalogue, only 2' 47",5 of time following 16 Cephei, when it ought to have been at least 10' or 11' following.

I take this opportunity to mention that, in general, the same author's account of my double stars is extremely erroneous.

30 Is 58 Camelopardali.

35. FLAMSTEED has no observation of this star; but, as it is marked 7m in the British catalogue, and has a line allotted to it, my Atlas and stars have been numbered so as to take it in; and the numbers I have used with double stars and other objects where the stars in Lynx after the 35th are concerned, must be reckoned accordingly.

37 "Dec. 4, 1796, This star is nearer to 25 than it is marked "in the Atlas." The RA should be corrected  $+ 1^{\circ}$ .

#### *Notes to Lyra.*

10 This is one of our periodical stars discovered by Mr. GOODRICKE; its period is about 6 days 9 hours. See Phil. Trans. Vol. LXXVI. page 197. The greatest variation of its light, as far as I have observed, is from " $10.14$  to " $\overline{6+7}; 10$ ." The expression  $\overline{6+7}$  is borrowed from algebra, and is always to be understood as has been explained in the note to 35 Draconis.

16 The British catalogue requires a correction of  $- 9^{\circ}$  in PD; and this star will then agree with 12 Lyræ HEVELII.

19 The British catalogue requires a correction of  $+ 8^{\circ}$  in PD.

#### *Notes to Perseus.*

5 FLAMSTEED has no observation of this star; but there is a star exactly in the place pointed out by the British catalogue.

10 Does not exist. FLAMSTEED never observed it.

12 "Sept. 5, 1798, This star, which has no time in FLAMSTEED'S observations, is placed a little too forward; or requires "about  $+ 10'$  in RA."

14. "Sept. 4, 1798, The time of this star is marked doubtful by FLAMSTEED, page 214; but it seems to be in the situation where the British catalogue places it."

15 Is lost. FLAMSTEED observed it Jan. 17, 1693, page 186; but it is not to be seen in the place pointed out by that observation. See BODE's *Ast. Jabr-Buch* for 1794, page 97.

19 Does not exist. There is an observation in page 185, which has produced this star, but it belongs to 18; for the star is lettered  $\tau$ , and a memorandum says, "Post transitum." See also BODE's *Ast. Jabr-Buch* for 1788, page 172.

24 "Sept. 4, 1798. The place of this star in the British catalogue wants a correction of  $+ 56'$  in PD, and  $- 45'$  in RA."

26 Is a periodical star. It has been noticed in the last century as subject to change, by MONTANARI and MARALDI; but its being periodical was discovered by Mr. GOODRICKE, in 1783, who fixed the time of its change at 2 days 20 hours  $48' 56''$ . See Phil. Trans. Vol. LXXIV. page 287. I have seen it when brightest, " $6 \text{ Arietis}, 26 - 23$ ", and when most diminished, " $26, 25$ ".

38. "Sept. 5, 1798, The British catalogue requires nearly  $+ 2^\circ$  in RA, and  $- 13'$  in PD; at least there is no other star that can be taken for it."

42 "Sept. 4, 1798, The British catalogue requires a correction of  $+ 13$  in PD."

### *Notes to Sextans.*

1 Is 10 Leonis.

10 Is 25 Leonis.

11 Is 28 Leonis.

12 " March 17, 1797, This star is misplaced in the British catalogue; the PD should be corrected  $+ 1^{\circ}$ ."

28 " March 21, 1797, This star is misplaced in the British catalogue, and requires a correction of  $+ 20'$  in RA, and  $+ 1^{\circ}$  in PD."

29 " March 21, 1797, The PD of this star in the British catalogue requires  $+ 1^{\circ}$ ."

### *Notes to Taurus.*

3 Does not exist. FLAMSTEED never observed it.

8 " Jan. 10, 1796, This star does not exist. FLAMSTEED "has no observation of it. There is a star about 9m not far " from the place."

9. " Dec. 28, 1798, This star is lost." M. DE LA LANDE says it is not to be found. See Mr. BODE's *Ast. Jahr-Buch* for 1795, page 198. FLAMSTEED has two complete observations of it, page 86, and page 506. We can hardly admit what Mr. BODE suggests, that this star, like the rest, has found its way into the British catalogue by some error of writing, or of calculating the observations; it will therefore be advisable to look for a future re-appearance of it, as it may prove to be a periodical or changeable one.

15 Does not exist. FLAMSTEED has no observation of it.

34 The estimation " 39 - 34" belongs to a star very nearly in the place where, according to FLAMSTEED's observation, 34 should be; but, as we know by calculation that the Georgian planet was about the situation where, the 13 of Dec. 1690, FLAMSTEED observed the supposed 34th, there can be no doubt but that he must have seen it, and taken it for a fixed star.

The magnitude, 6m, which he assigned to 34, agrees perfectly well with the lustre of the planet, compared with other stars which the same author has marked 6m; and, with his telescope, he could not have the most distant suspicion of its being any other object than a fixed star of about the 6th magnitude.

40 “ March 4, 1796. The RA in the Atlas requires a correction of about  $+ 20'$ .”

55 In the British catalogue, the PD requires  $- 8'$ .

56 The RA in the British catalogue requires  $- 15'$ .

82 Does not exist. FLAMSTEED did not observe this star, unless we admit a correction of the British catalogue  $- 1^{\circ} 5'$  in PD.

99 FLAMSTEED has no observation of this star; but, as there is one in the heavens, about a degree more north, the British catalogue requires probably a correction of  $- 1^{\circ}$  in PD.

100 This star is lost. FLAMSTEED settled its place, page 369, and the observation seems to be a very good one.

103 FLAMSTEED has no observation of this star. How it came to be inserted in the British catalogue does not appear. I have given it as a double star V, 114, and here also estimated its brightness; but it must be remembered that my estimations do not strictly ascertain the place of objects. If, therefore, 103 does not exist, my double star, as well as the one here estimated, must be some star not far from the place assigned to 103 in the British catalogue.

112 Is 23 Aurigæ.

118 The Atlas should be corrected  $- 30'$  in RA.



124 Does not exist; unless we admit a correction of  $+ 1^{\circ} 4'$  in RA of the British catalogue.

138 Does not exist; but, as there is no time in FLAMSTEED's observation of this star, it is probably misplaced in the British catalogue, for there are several considerable stars in the neighbourhood.

*Notes to Triangulum.*

1 "Nov. 2, 1798," This star, which has the time and zenith distance in FLAMSTEED's observations doubtful, seems to be nearly in the place where the British catalogue gives it. It should perhaps be a few minutes more north.

Slough, near Windsor,

Jan. 28, 1799.